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Included is a marked-up version of the amended specification of application 10/082,481. Also included is a clean copy of the amended specification. Also included in an amended Figure 2. Finally a letter is included addressing the non-final office action. I hereby declare that said substitute specification contains no new matter.

Alfred W. Muldoon

There are a total of 47 pages (21 marked specification, 21 clean, 3 letter, 1 drawing and 1 this statement).

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Dear Examiner Vu,

With respect I ask you to reconsider your rejection based Bhatnagar. Before explaining the differences between Bhatnagar and the present invention some nomenclature differences must be addressed. The term transducer was defined in the present invention (page 3 lines 2-5) as "... a transducer is a device whose function is to turn the electrical energy into some other energy form, typically, but not limited to motor windings, solenoids, heating elements and display elements (LED, LCD, VF, EL, incandescent, etc.)" In Bhatnagar "... transducers/sensors are used to convert the value of the physical parameter to a signal suitable for processing by the control system."

In the original application of the present invention the term transducer is an output device in the nomenclature used by Bhatnagar. The nomenclature used by Bhatnagar would appear to be the more common. I have therefore replaced the term *transducer* with the term *output device* throughout the amended application. From this point on in this letter the term transducer will refer to a sensor or input device as defined in Bhatnagar.

The cited reason for objection to claims 1-20 listed Figure 14. Figure 14 only shows scans of Bhatnagar transducers circuits WLS, WTS and COS; it does not show scans of output devices. Therefore I assume my poor choice of nomenclature lead to your believing that I was using the term transducer as Bhatnagar uses it. Actually there are no transducers as defined by Bhatnagar in the DESCRIPTION OF PREFERRED EMBODIMENT of the present invention.

While transducers/sensors could be included in a device using the techniques of the present invention they are not relevant to the teachings of the present invention. Since the Bhatnagar embodiment shown in Figure 14 does not scan output device circuits which are germane to the present invention I believe that is no basis for objection to claims 1-20 once the nomenclature has been sorted out. However I assume you will point out that in Figure 1 and his other embodiments Bhatnagar does scan the output device circuits, i.e., the type the present invention does.

Your short rejection implies that the present invention is just an adaptive control that also happens to scan circuits. The fact that the present invention scans output device circuits is clearly not sufficient to make it unique, as feedback is nearly as old as controls. It is what the control learns from the scan that makes the present invention unique. Bhatnagar and other prior art do not teach having a control scan the output devices in a machine to determine what options are included in the model. In prior approaches adaptive controls that scan the circuits of output devices use other means than the scan to determine which model it is operating.

The present invention and Bhatnagar are both configurable controls. In Bhatnagar the configuration data of the configuration memory determines what options are present. What makes the present invention unique is how it determines which options are present in the device it is operating. The present invention scans output device circuits (amended form) to determine what options are present. In the present invention all that is required to add an option to a model is to add the output device that option requires. For example in order for a washer to have the option of spinning/agitating at more than one speed it

must have a motor with more than one speed. With the present invention putting a single speed motor in the washer not only physically limits the washer to single speed it also informs the control that no multispeed options are available. Similarly removing an LED, which lights when an option is selected also informs the control the model does not have that function.

Because the present invention reads the hardware of the machine it is in to determine what options are present the control is universal. The control of the present invention can operate any device in a model range without modification to the control. In Bhatnagar the configuration memory must be set to the model it is operating. While the electronics of the control in Bhatnagar may be universal the software/firmware is not. The method employed by the present invention allows one to take a control from any model and place it in another model and it will operate the new model correctly. The Bhatnagar method requires one to reprogram the configuration memory if the control is moved to a different model.

Bhatnagar model identification componentry, configuration memory is not an output device. Configuration memory sole purpose is to allow the control to operate multiple models. The present invention's model identification componentry, output devices are dual purpose. Output devices allow a machine to perform tasks while also serving to indicate to the control what tasks the model is capable of handling.

By reading the hardware of the device, the present invention saves the expense of configuration memory and a selection means to determine what bit or byte of the memory is to be read. The present invention can use the selection means used to selectively activate output devices to determine which circuit is read as shown in Figure 1 and 2 and as specifically claimed in claims 3, 6, 9, 12, 15 and 20. As the selection means is required to activate the output devices it does not represent an additional cost as it does in Bhatnagar.

Also the present invention eliminates the possibility of placing the wrong control in a device since it will only allow the options for which the required hardware is actually present. This makes repairs very simple and eliminates the possibility of installer error. If, on the other hand, one removed a Bhatnagar control from a device without a detergent valve, and placed it in a device with a detergent valve, the control would not operate the detergent valve, since Bhatnagar does not scan the hardware of a device to limit options.

The lone example of scanning output device circuits in Bhatnagar is O2a in Figure 1, however Bhatnagar does not teach using the signal on O2a to identify options. O2a checks the current in the output device circuit for overload. Yes the operation of the control is affected by the results of the scan, namely if an overload is detected the device can be shut down or the current otherwise limited. However the scan does not identify a model option. Indeed Bhatnagar in the explanation of Figure 8 states that the sense circuitry and the response of the control to the scan is configured by the configuration memory. Thus in Bhatnagar the model dictates how the scan of an output device circuit is performed and responded to, rather than the scan of an output device dictating model option(s) as is done by the present invention.

Since Bhatnagar does not scan output device circuits to determine model there should be no objection based on it. Even granted the different purpose Bhatnagar (Figure 8) does not demonstrate any of the techniques in the claims to lower the cost of implementing the present invention. As opposed to claims 2, 5, 8, 11, 14 and 19 Bhatnagar uses separate sensors for each circuit. As opposed to claims 3, 6, 9, 12, 15 and 20 Bhatnagar uses separate multiplexers for the scan versus the drive side. And technique in claim 4 for identifying that there is a fault in the scan or hardware because no model has the impedance is not presented by Bhatnagar principally because his method doesn't get model info from the output device circuits.

Further in regards to claims 13-20 which specify that the output devices which are used to identify options are display devices, Bhatnagar in Figure 11 does not even scan the display, there is no feedback. Of course why would he scan the display he determines the options of the model using the configuration data of the configuration memory?

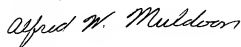
Further in claims 18-20 the same sensing means used to sense the display output devices on some models are used to scan the position switches on other models. Obviously Bhatnagar can't do that since he does scan the display. Clearly Bhatnagar does not present the concept of using the same selection means and circuits containing display elements on some models to be used to handle control panels employing position switches on other models.

In addition to replacing the term *transducer(s)* with *output device(s)* in the application, a sentence in one paragraph and a new paragraph has been added to the BACKGROUND OF THE INVENTION citing Bhatnagar and prior art that scans output device circuits. In Figure 2 *TRANSDUCERS* has been replaced with *OUTPUT DEVICES* and the spelling of VALVE has been corrected. The double negative in claim 7 has been corrected. And there are a small number of grammatical corrections in the application.

I have included marked and clean copies of the amended application. A copy of the amended Figure 2. Also included is a signed statement that there is no new matter in the amended application.

I believe I have clearly defined the significant differences between Bhatnagar and the present invention. And I think that the change in nomenclature in the amended application should serve to clarify the application.

Sincerely,



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